

Original Article

Prevalence of Metabolic Syndrome and Insulin Resistance in Children and Adolescent of Qazvin, Iran

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Abstract

Background: The prevalence of metabolic syndrome (MetSyn) is increasing worldwide. The aim of this study was to determine the prevalence of MetSyn and insulin resistance (IR) in children and adolescents in Qazvin, Iran.

Methods: A cross-sectional study was conducted in 338 children and adolescents aged 10–18 years old who were selected by a multistage cluster random sampling method. We performed standardised measurements of variables including waist circumference (WC), blood pressure, plasma glucose level, total cholesterol, high-density lipoprotein cholesterol (HDL), triglycerides, and insulin. MetSyn was defined according to the International Diabetes Federation criteria. IR was estimated by the homeostatic model assessment.

Results: Of the 338 total subjects, 172 were female. The overall prevalence of MetSyn and IR were 3.4% and 18.2%, respectively. There was no sex difference for the prevalence of MetSyn. A total of 185 subjects (56.4%) had one or two components of MetSyn. The most common component was low HDL levels in both sexes, which was followed by high WC in females and high fasting plasma glucose levels in males.

Conclusion: The lack of a standard definition of MetSyn in children and adolescents combined with the geographical and socioeconomic differences make it difficult to compare the results from different studies. Modification of lifestyle habits is an important strategy in preventing MetSyn and IR.

Keywords: adolescent, body mass index, insulin resistance, Metabolic Syndrome X